

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Indu Parikh, *et al.* ) Examiner: Not Yet Assigned  
Serial No.: Not Yet Assigned ) Art Unit: Not Yet Assigned  
Filed: December 20, 2001 ) CLEAN COPY OF THE PENDING  
For: TREATMENT FOR DIABETES ) CLAIMS

**BOX Patent Application**

Assistant Commissioner for Patents  
PO Box 2327  
Arlington, VA 22202

Sir:

The following is the text of the claims shown in the attached "Version with Markings to Show Changes Made".

IN THE CLAIMS

1. (Amended) A method for treating diabetes mellitus in an individual in need thereof, said method comprising:  
administering to said individual a composition providing a gastrin/CCK receptor ligand and an EGF receptor ligand in an amount sufficient to effect differentiation of pancreatic islet precursor cells to mature insulin-secreting cells.
2. (Reiterated) The method according to Claim 1, wherein said at least one receptor ligand is an EGF receptor ligand is selected from the group consisting of EGF1-53, EGF1-48,

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Robert Pattison  
(Signature)

Robert Pattison  
(Printed Name)

3. (Reiterated) The method according to Claim 2, wherein said EGF1-53, EGF1-48, or its EGF1-47 or EGF1-49 congener is human EGF1-53, EGF1-48, or its EGF1-47 or EGF1-49 or its congener.

4. (Amended) A method for providing a patient with diabetes in need thereof with a population of mature insulin-secreting  $\beta$ -cells, said method comprising:

providing pancreatic  $\beta$ -cells, outside said patient, with a sufficient amount of a gastrin/CCK receptor ligand and an epidermal growth factor receptor ligand to induce proliferation of mature insulin-secreting  $\beta$ -cells of said pancreatic  $\beta$ -cells prior to said transplanting, whereby an expanded population of mature insulin-secreting  $\beta$ -cells is obtained; and

transplanting into said patient said mature insulin-secreting  $\beta$ -cells.

5. (Reiterated) The method according to Claim 4, wherein said diabetes is Type 2 diabetes.

6. (Reiterated) The method according to Claim 4, wherein said gastrin/CCK receptor ligand is a gastrin.

7. (Reiterated) The method according to Claim 4, wherein said epidermal growth receptor ligand is TGF- $\alpha$  or an EGF selected from the group consisting of EGF1-53, EGF1-48, or its EGF1-47 or EGF1-49 congener.

19. (New) The method according to Claim 1, wherein said gastrin/CCK receptor ligand is a gastrin.

20. (New) Pancreatic islet precursor cells treated *ex vivo* with a sufficient amount of a gastrin/CCK receptor ligand and an EGF receptor ligand to induce proliferation of said pancreatic islet precursor cells into mature insulin-secreting  $\beta$ -cells, whereby an expanded

population of said mature insulin-secreting  $\beta$ -cells is obtained.

21. (New) A method for obtaining an expanded population of insulin-secreting pancreatic  $\beta$ -cells, said method comprising:

providing pancreatic islet precursor cells with a sufficient amount of a gastrin/CCK receptor ligand and an EGF receptor ligand to induce proliferation of said insulin secreting pancreatic  $\beta$ -cells, whereby said insulin-secreting population of pancreatic  $\beta$ -cells is obtained.

22. (New) The method according to Claim 21, wherein said providing is *ex vivo*.

23. (Amended) A method for treating diabetes mellitus in an individual in need thereof, said method comprising:

administering to said individual:

a composition providing a gastrin/CCK receptor ligand selected from the group consisting of gastrin and cholecystokinin; and

an EGF receptor ligand selected from the group consisting of EGF1-53, EGF1-48, or its EGF1-47 congener of EGF1-48, and an EGF1-49 congener of EGF1-48;

in an amount sufficient to effect differentiation of pancreatic islet precursor cells to mature insulin-secreting cells.

24. A method for obtaining an expanded population of insulin-secreting pancreatic  $\beta$ -cells *ex vivo*, said method comprising:

providing pancreatic islet precursor cells with a sufficient amount of;

a composition providing a gastrin/CCK receptor ligand selected from the group consisting of gastrin and cholecystokinin; and

an EGF receptor ligand selected from the group consisting of TGF- $\alpha$ , EGF1-53, EGF1-48, or its EGF1-47 congener of EGF1-48, and an EGF1-49 congener of EGF1-48;

whereby said insulin-secreting population of pancreatic  $\beta$ -cells is obtained.

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whereby said insulin-secreting population of pancreatic  $\beta$ -cells is obtained.

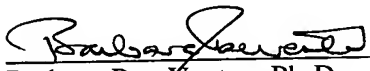
25. A kit for use in the treatment of diabetes, comprising:  
pancreatic islet precursor cells according to Claim 20.

### CONCLUSION

Should the Examiner have any questions regard the above, in order to expedite prosecution, the Examiner is invited to call the undersigned.

Respectfully submitted,

Dated: December 20, 2001

  
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